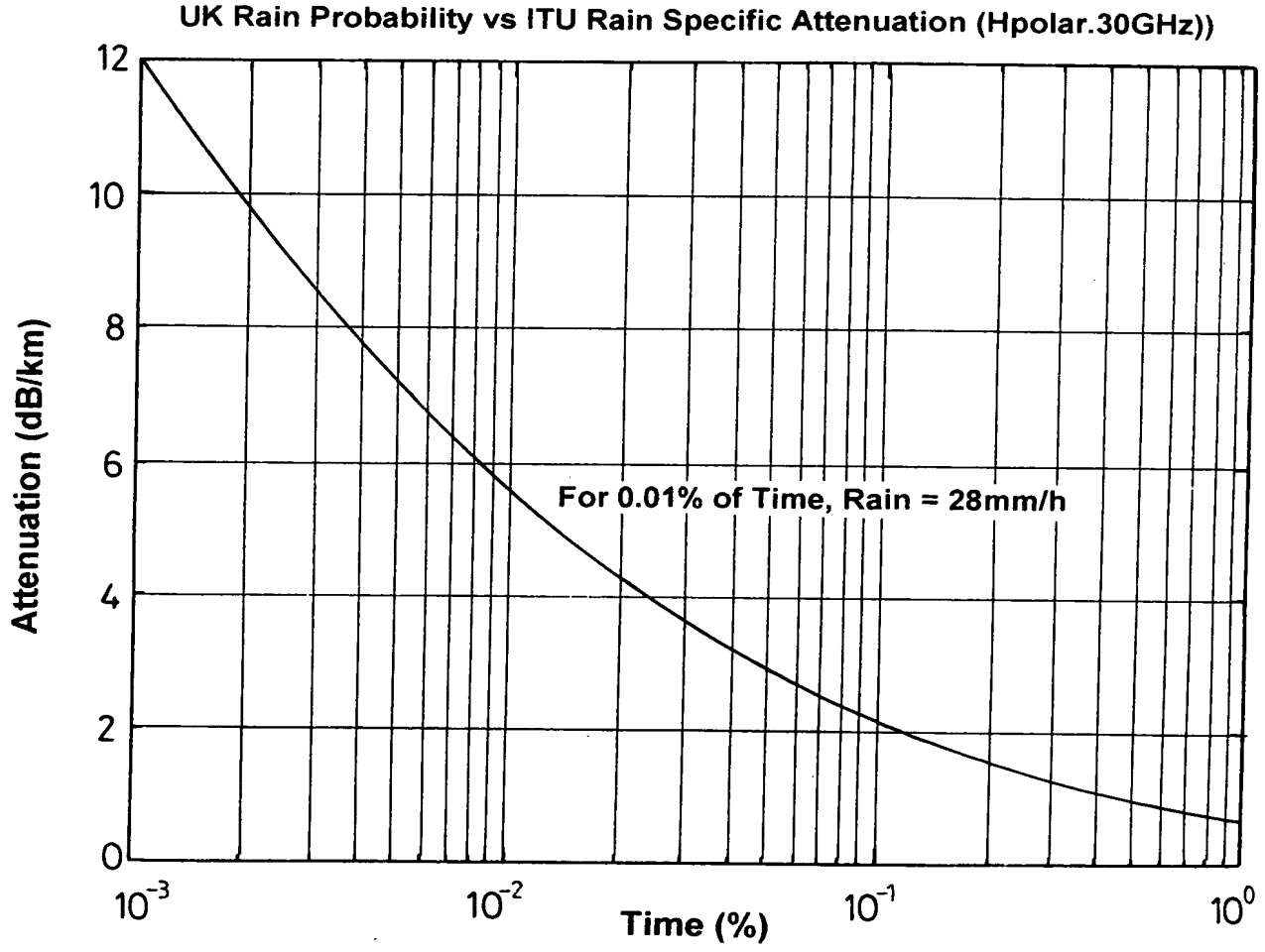


Fig. 1
(PRIOR ART)

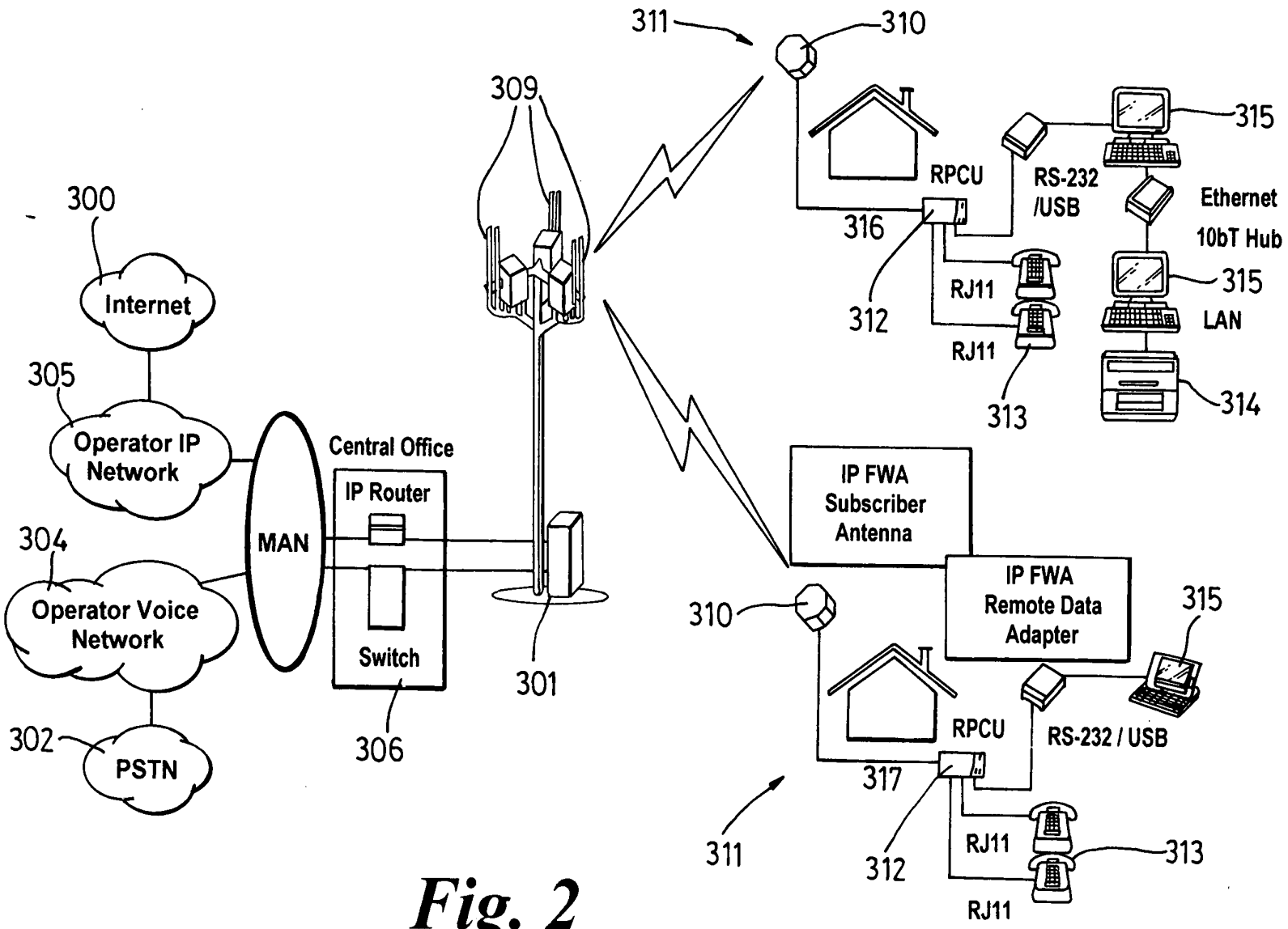


Fig. 2

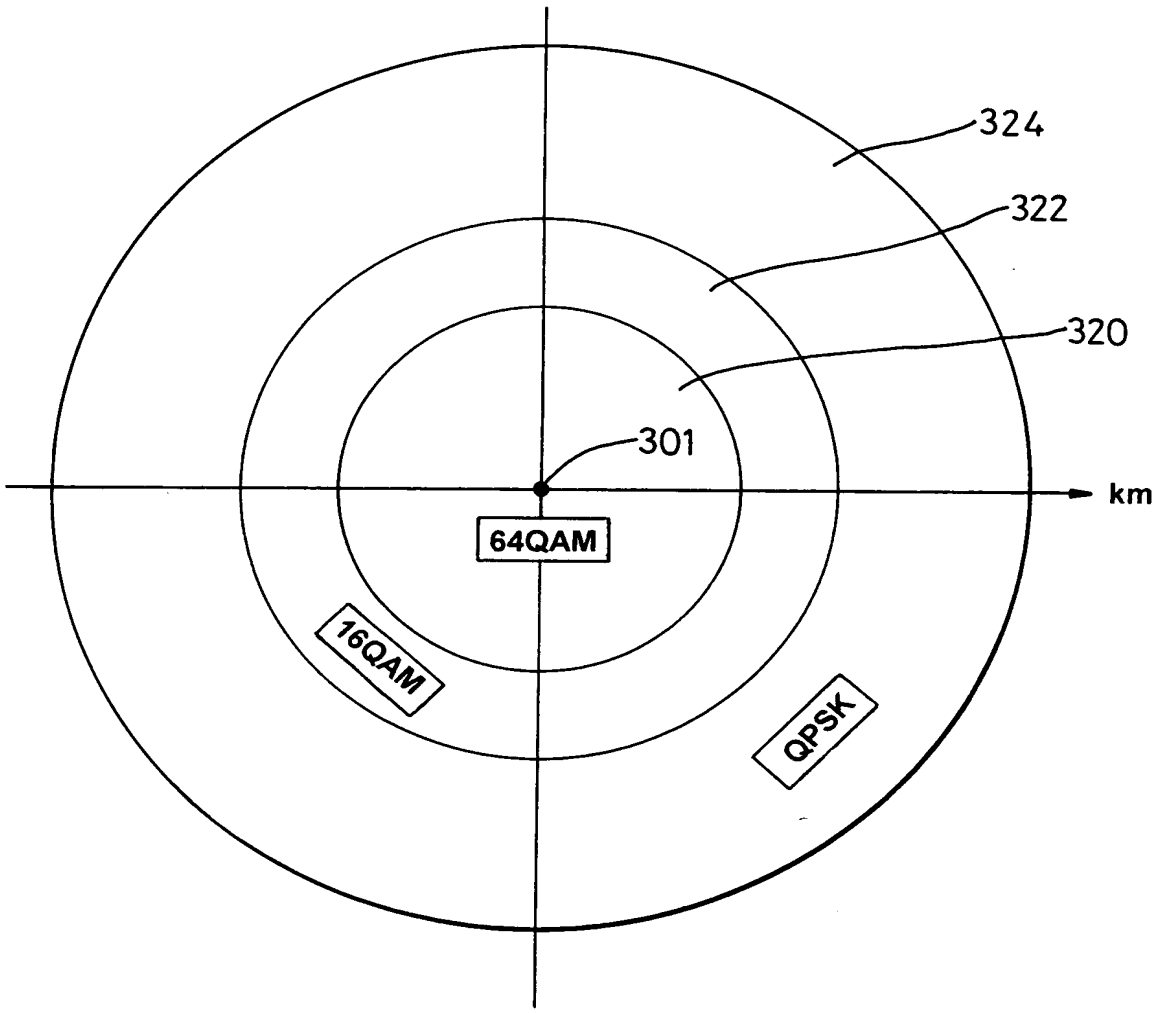


Fig. 3

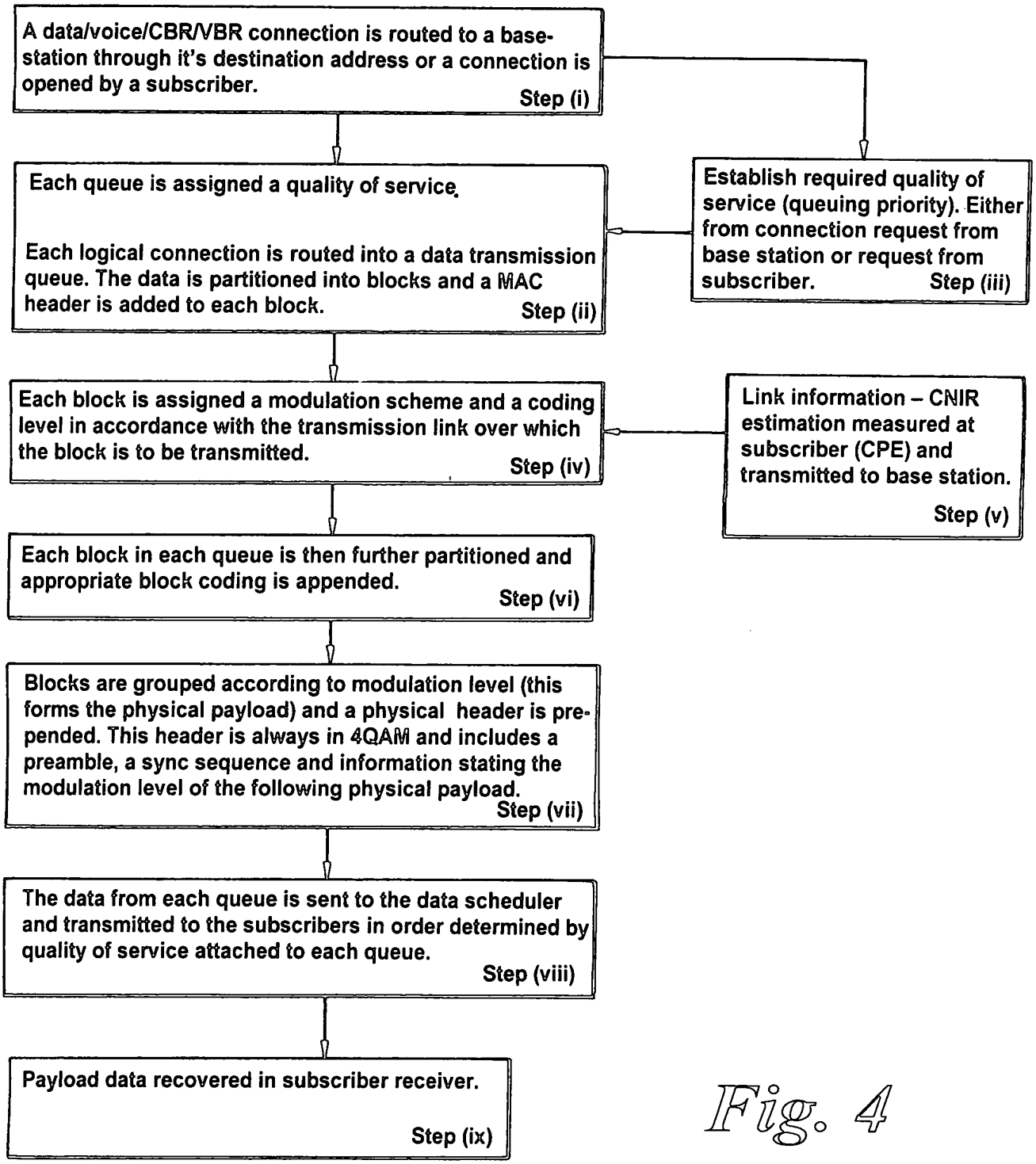


Fig. 4

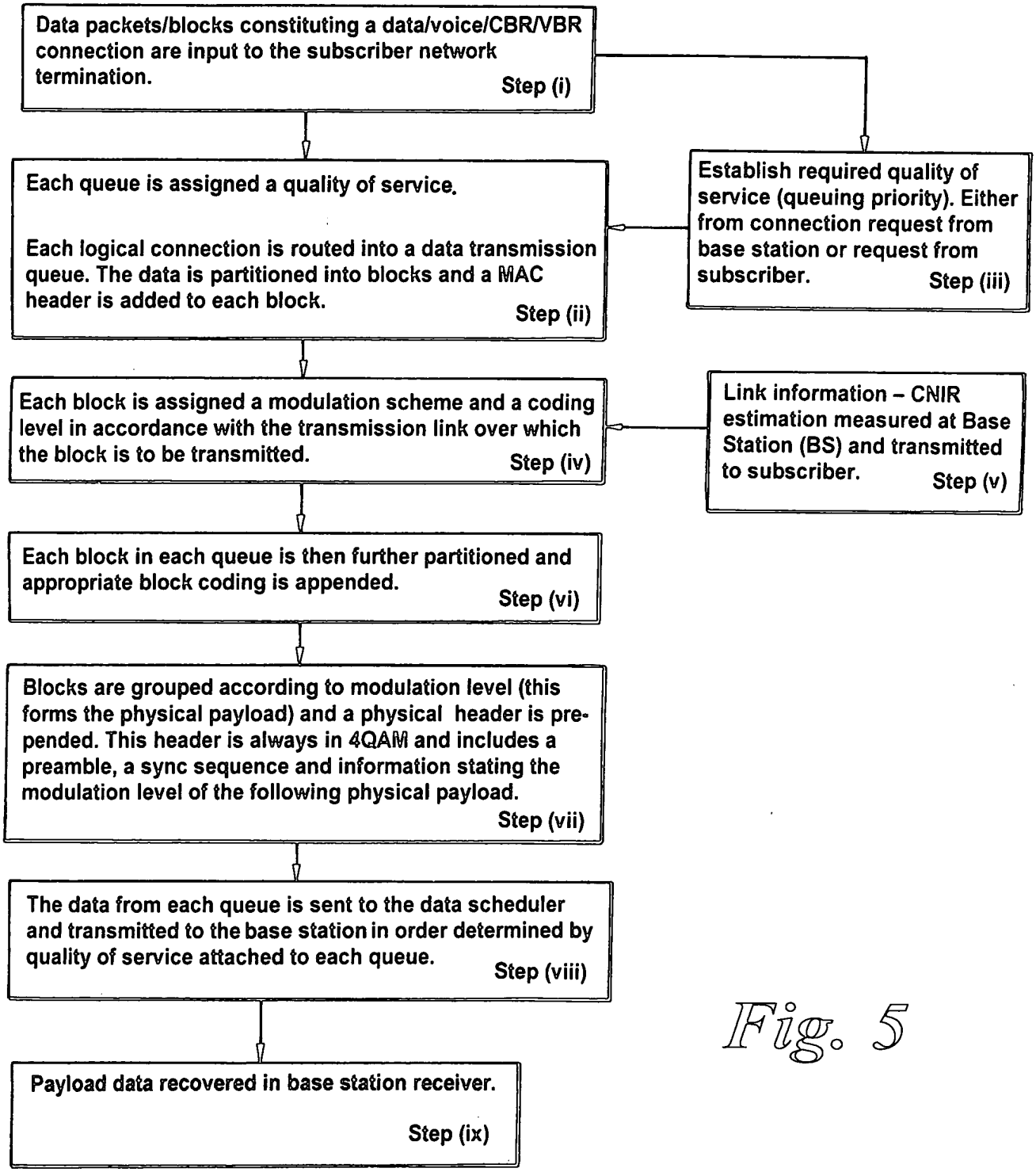


Fig. 5

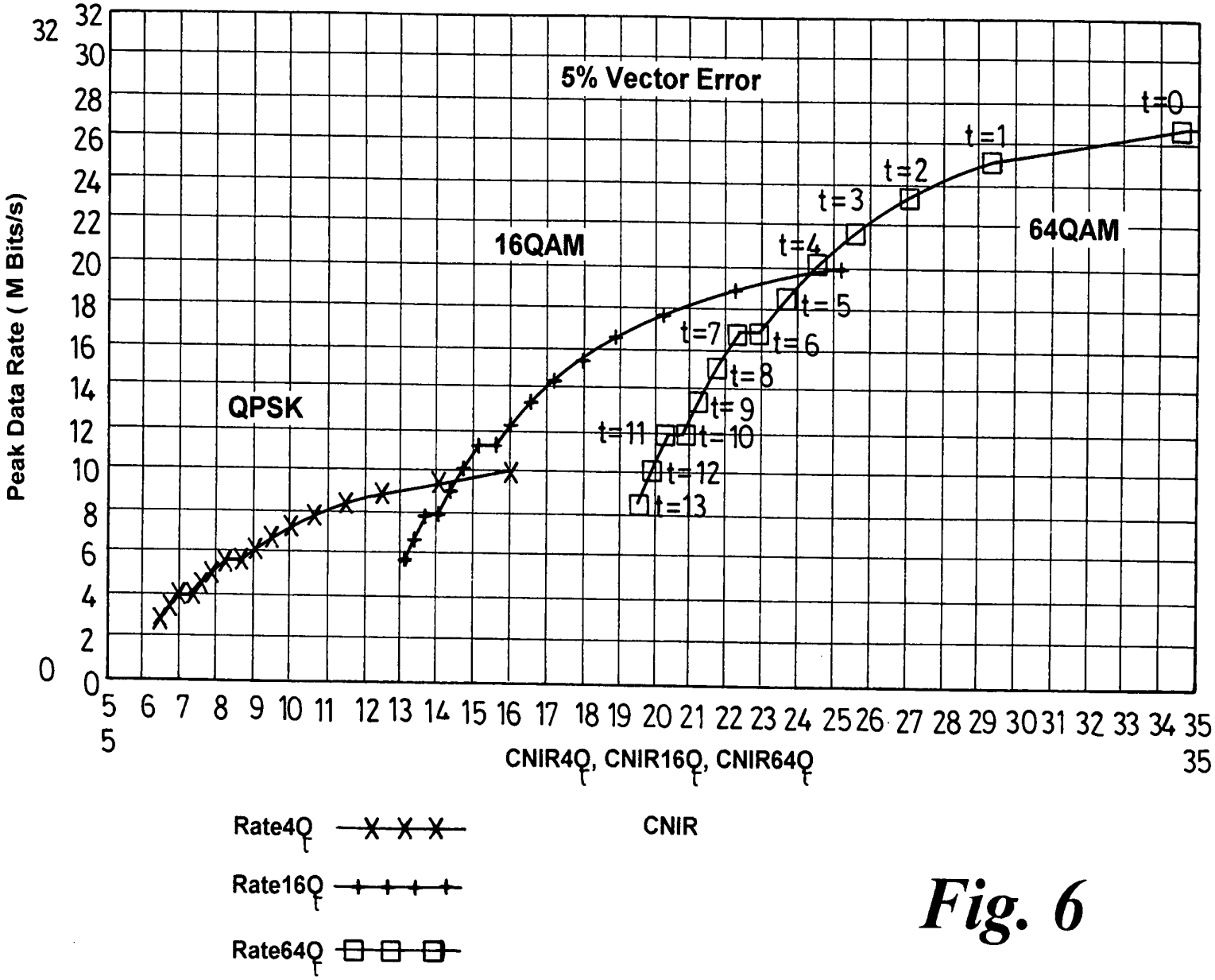


Fig. 6

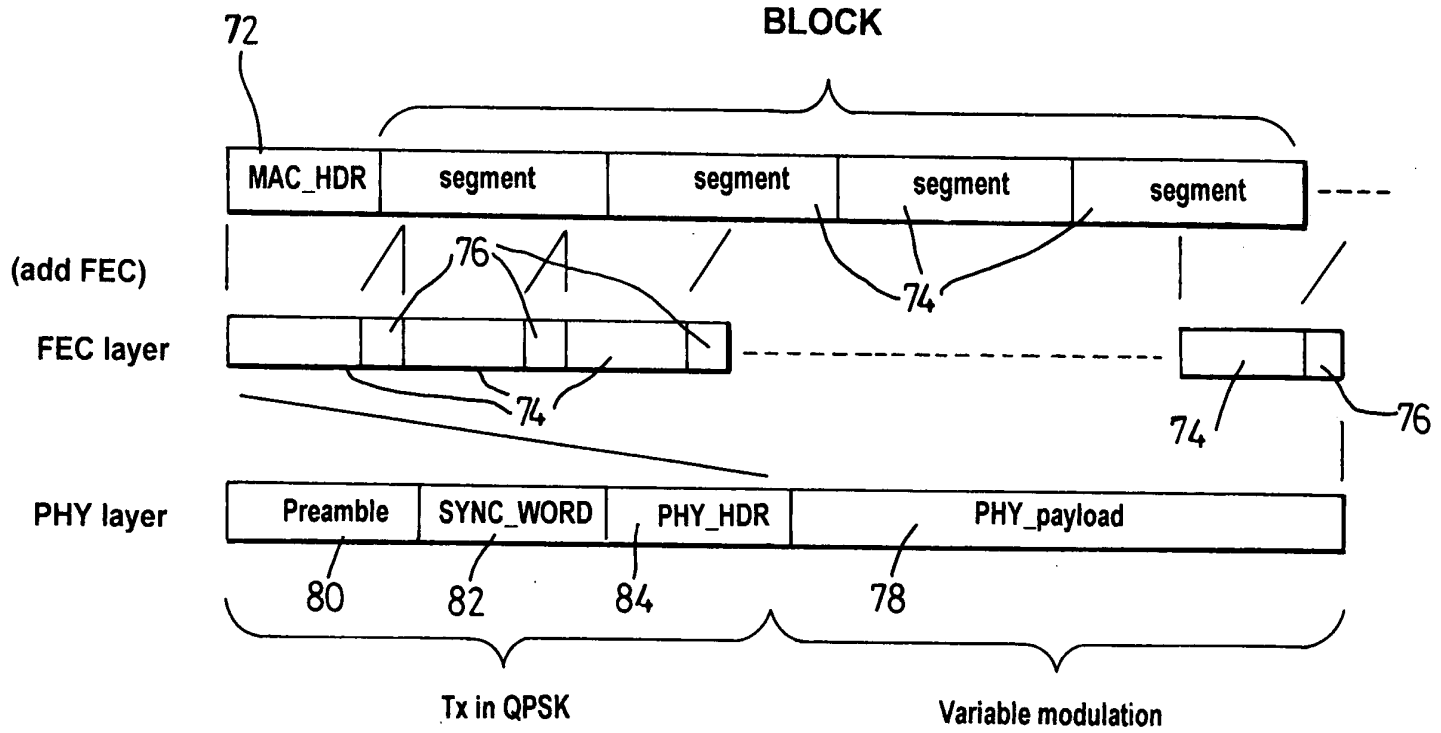


Fig. 7

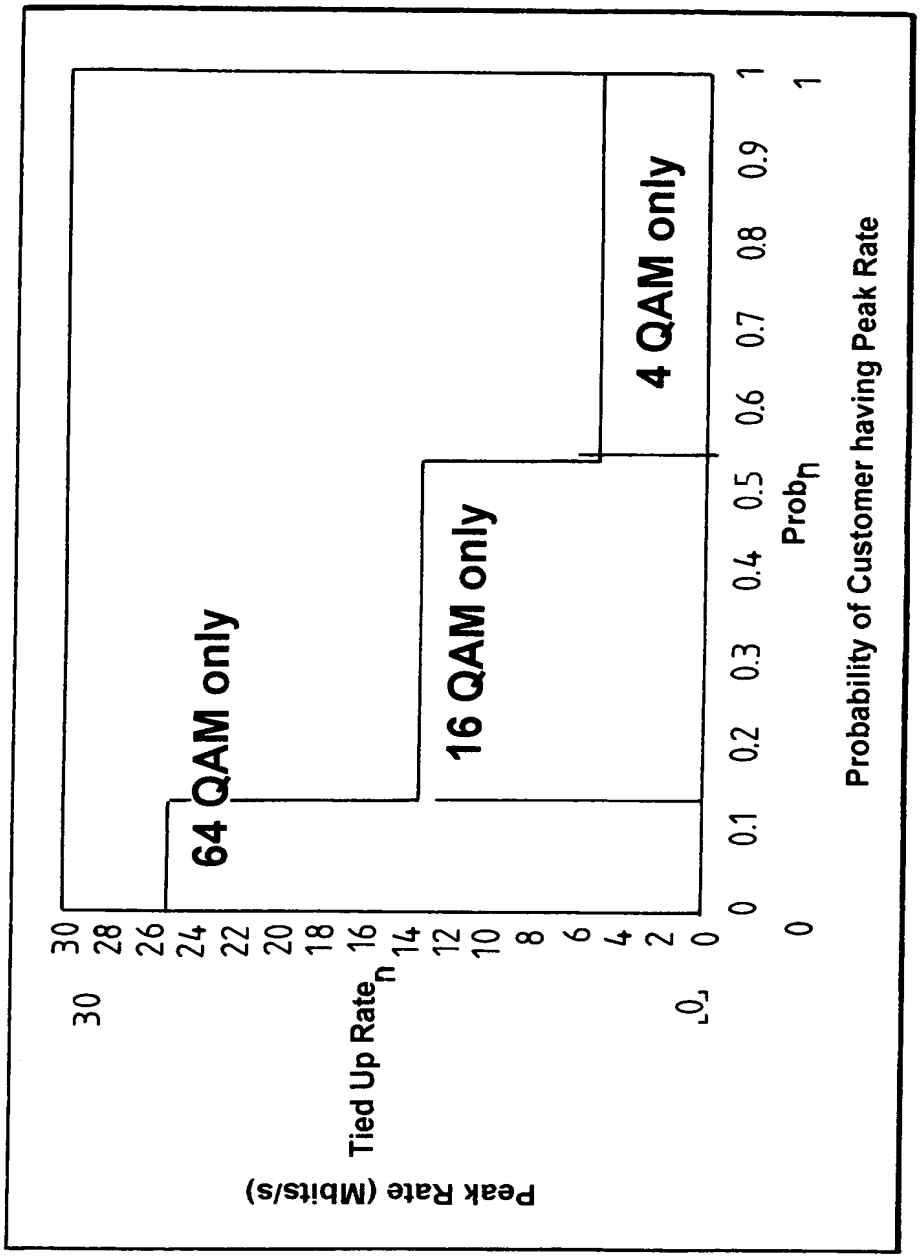


Fig. 8a

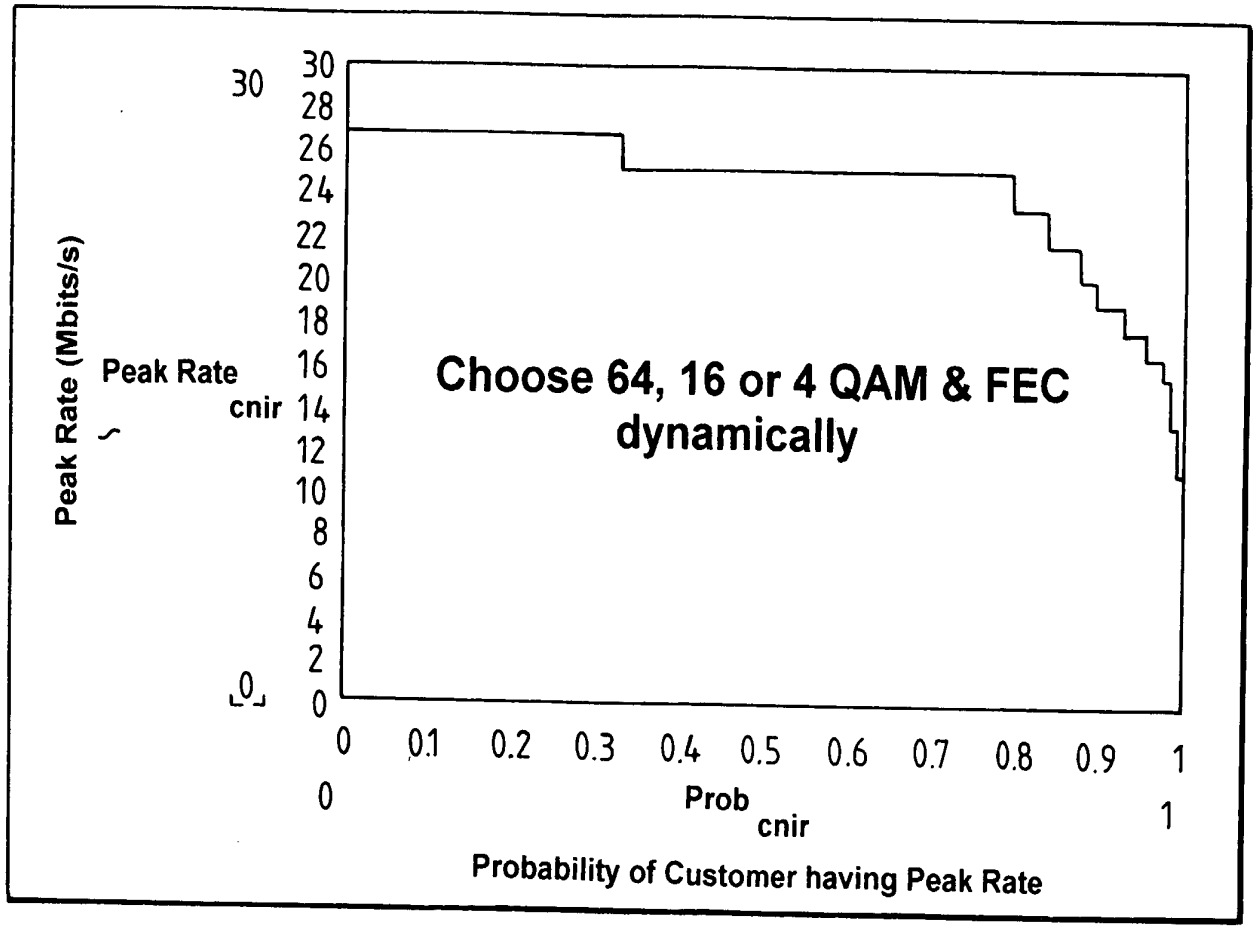
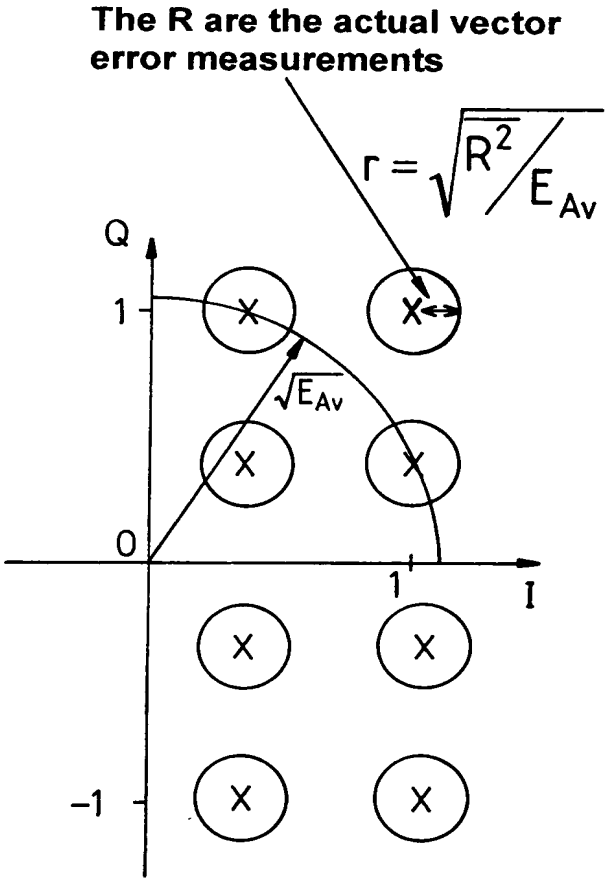


Fig. 8b



16QAM

Fig. 9

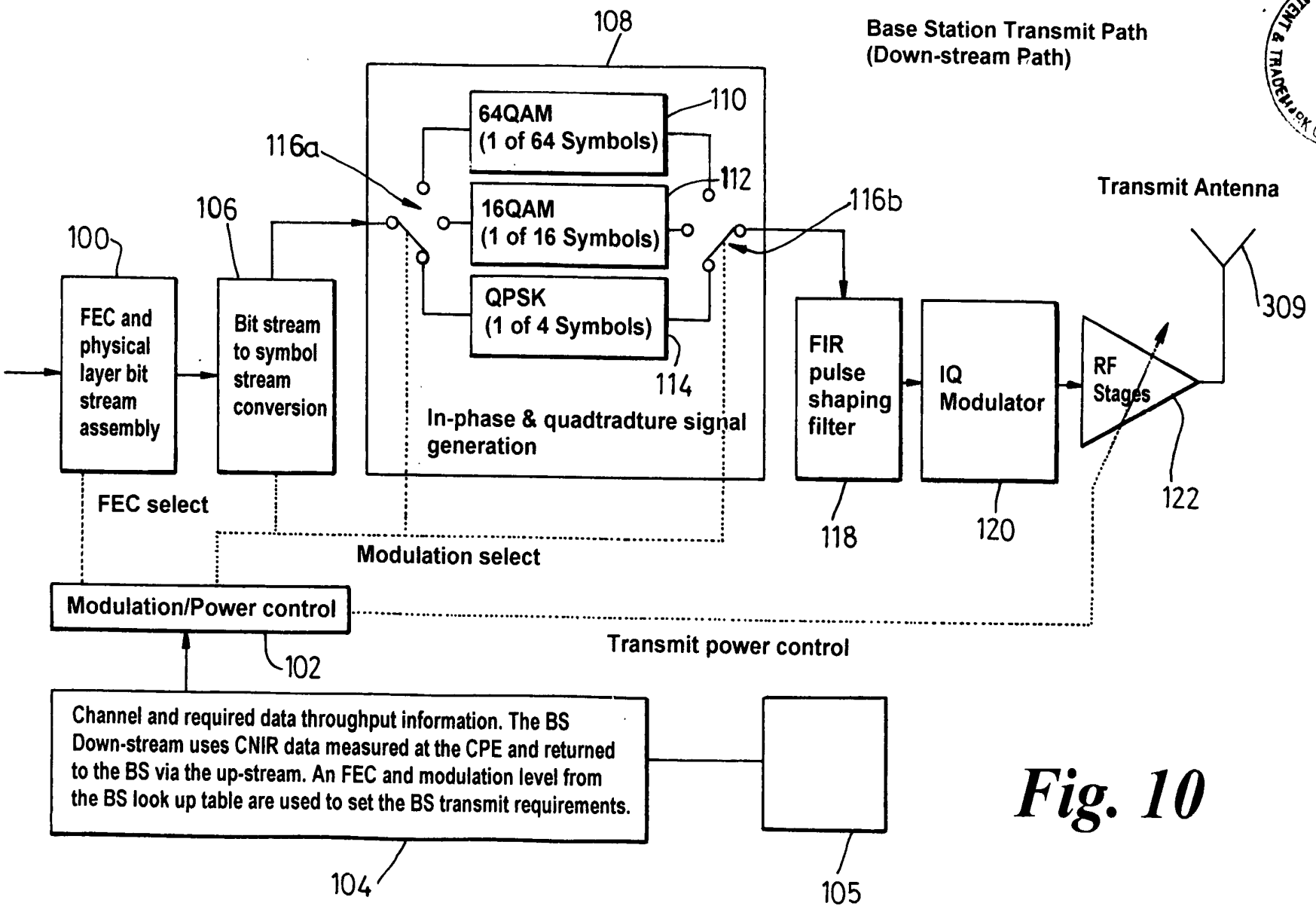

Base Station Transmit Path
(Down-stream Path)
108
64QAM
(1 of 64 Symbols)
110
16QAM
(1 of 16 Symbols)
112
QPSK
(1 of 4 Symbols)
114
116a
116b
106
100
FEC and physical layer bit stream assembly
Bit stream to symbol stream conversion
In-phase & quadtradture signal generation
FIR pulse shaping filter
IQ Modulator
RF Stages
Transmit Antenna
309
122
118
120
FEC select
Modulation select
Modulation/Power control
102
Transmit power control
Channel and required data throughput information. The BS Down-stream uses CNIR data measured at the CPE and returned to the BS via the up-stream. An FEC and modulation level from the BS look up table are used to set the BS transmit requirements.
104
105

Fig. 10

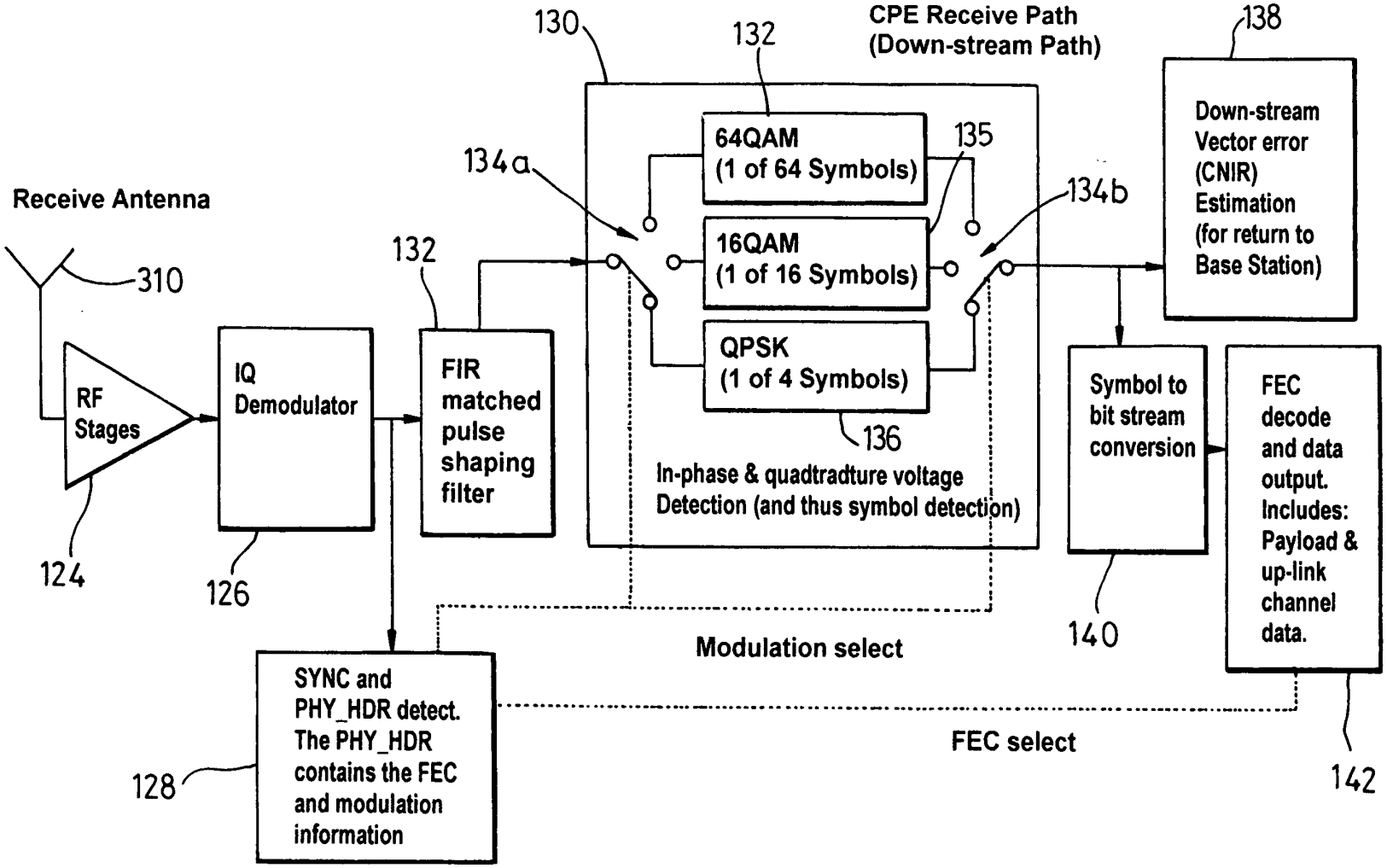

CPE Receive Path
(Down-stream Path)
130
132
138
64QAM
(1 of 64 Symbols)
135
134a
134b
16QAM
(1 of 16 Symbols)
QPSK
(1 of 4 Symbols)
136
Down-stream
Vector error
(CNIR)
Estimation
(for return to
Base Station)
Receive Antenna
310
132
RF
Stages
IQ
Demodulator
FIR
matched
pulse
shaping
filter
In-phase & quadtradture voltage
Detection (and thus symbol detection)
Symbol to
bit stream
conversion
FEC
decode
and data
output.
Includes:
Payload &
up-link
channel
data.
124
126
140
Modulation select
SYNC and
PHY_HDR detect.
The PHY_HDR
contains the FEC
and modulation
information
FEC select
128
142

Fig. 11

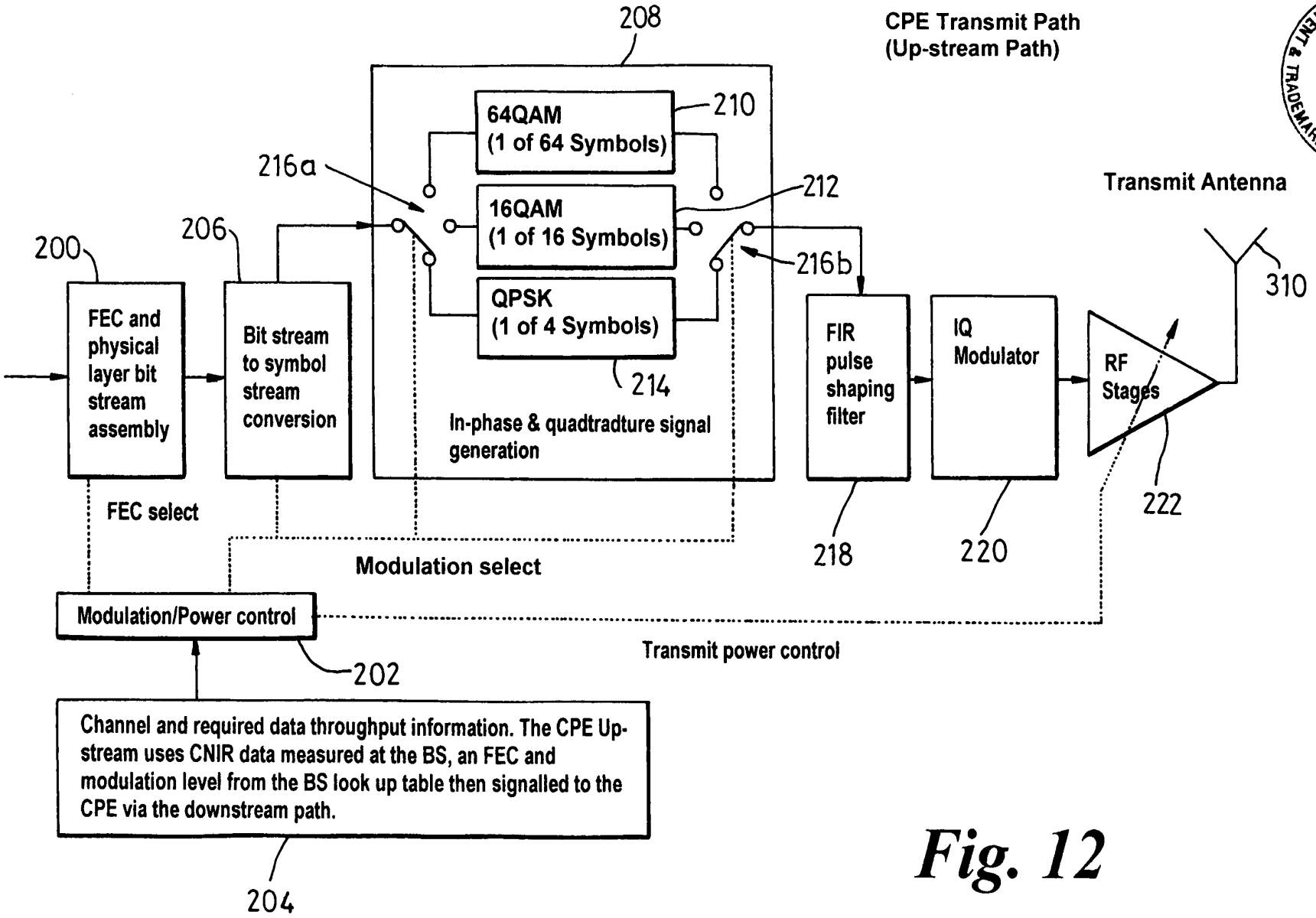


Fig. 12

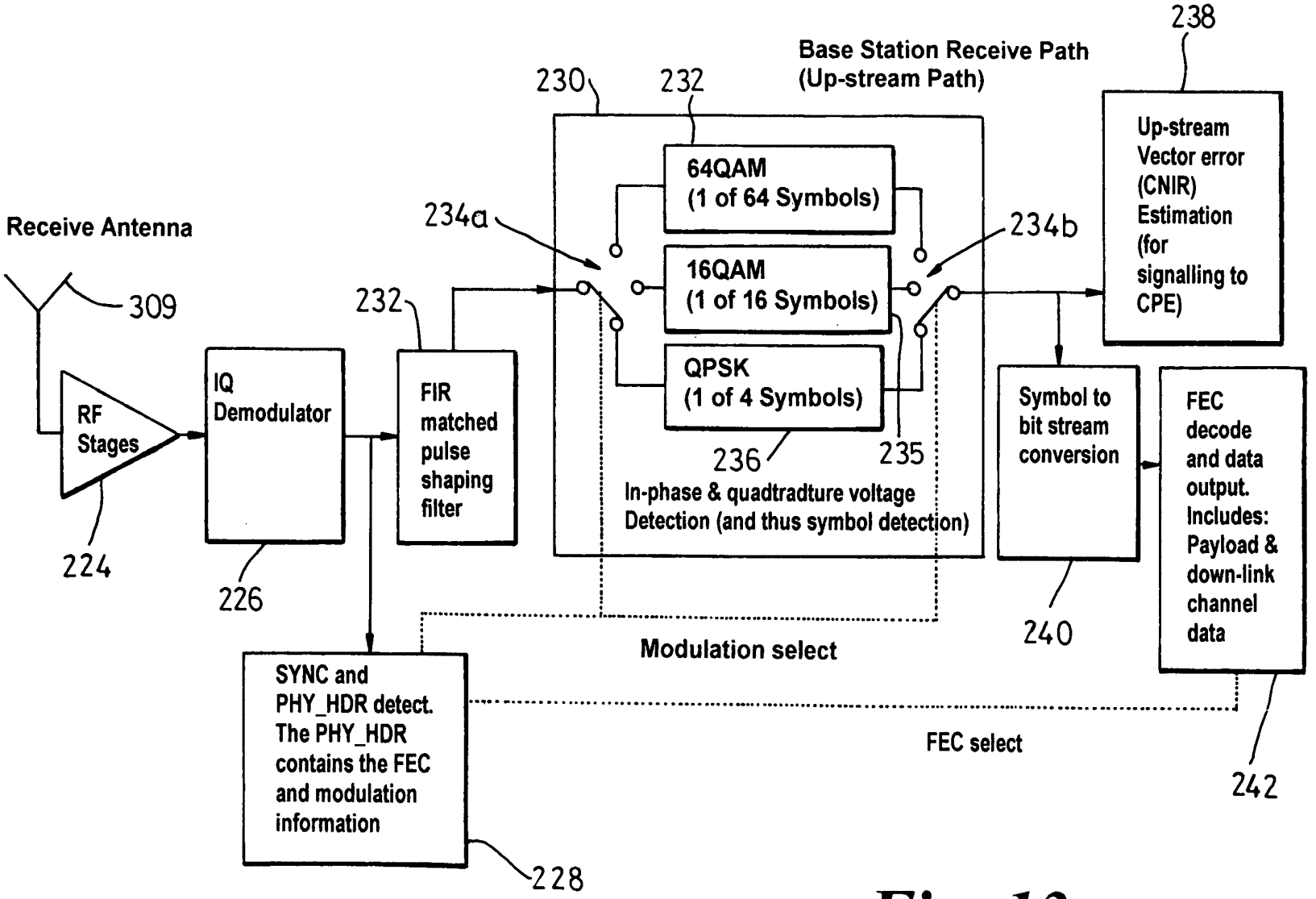


Fig. 13